

but half so intense, that is, it shall be such a Colour as would be made by diluting the intensest yellow with an equal quantity of whiteness; and if it fall upon the center O, the Colour shall have lost all its intenseness, and become a white. But it is to be noted, That if the point Z fall in or near the line OD, the main ingredients being the red and violet, the Colour compounded shall not be any of the prismatic Colours, but a purple, inclining to red or violet, accordingly as the point Z lieth on the side of the line DO towards E or towards C, and in general the compounded violet is more bright and more fiery than the uncompounded. Also if only two of the primary Colours which in the Circle are opposite to one another be mixed in an equal proportion, the point Z shall fall upon the center O, and yet the Colour compounded of those two shall not be perfectly white, but some faint anonymous Colour. For I could never yet by mixing only two primary Colours produce a perfect white. Whether it may be compounded of a mixture of three taken at equal distances in the circumference I do not know, but of four or five I do not much question but it may. But these are curiosities of little or no moment to the understanding the Phenomena of nature. For in all whites produced by nature, there uses to be a mixture of all sorts of rays, and by consequence a composition of all Colours.

To give an instance of this Rule; suppose a Colour is compounded of these homogeneous Colours, of violet 1 part, of indico 1 part, of blue 2 parts, of green 3 parts, of yellow 5 parts, of orange 6 parts, and of red 10 parts. Proportional to these parts I describe the Circles x, v, t, s, r, q, p respectively, that is, so that if the Circle x

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be r, the Circle v may be 1, the Circle t 2, the Circle s 3, and the Circles r, q and p, 5, 6 and 10. Then I find Z the common center of gravity of these Circles, and through Z drawing the line OY, the point Y falls upon the circumference between E and F, some thing nearer to E than to F, and thence I conclude, that the Colour compounded of these ingredients will be an orange, verging a little more to red than to yellow. Also I find that OZ is a little less than one half of OY, and thence I conclude, that this orange hath a little less than half the fulness or intenseness of an uncompounded orange; that is to say, that it is such an orange as may be made by mixing an homogeneous orange with a good white in the proportion of the line OZ to the line ZY, this proportion being not of the quantities of mixed orange and white powders, but of the quantities of the lights reflected from them.

This Rule I conceive accurate enough for practise, though not mathematically accurate; and the truth of it may be sufficiently proved to sense, by stopping any of the Colours at the Lens in the tenth Experiment of this Book. For the rest of the Colours which are not stopped, but pass on to the Focus of the Lens, will there compound either accurately or very nearly such a Colour as by this Rule ought to result from their mixture.

PROP.